

**In the Claims:**

Claims 1-209 (cancelled).

Claim 210 (new): A method comprising the steps of:

    sending a first signal from an interrogator to a plurality of radio frequency identification (RFID) tags, the first signal including a set of parameters that describe a portion of memory and a bit string;

    each of the plurality of tags receiving the first signal and comparing the bit string against respective bits stored in the portion of memory of each respective tag to determine if the respective tag is a member of a selected tag group;

    each tag of the selected tag group independently picking a respective first random value from a first group of integers, the respective first random value being associated with a slot in accordance with an arbitration scheme; and

    a first tag of the selected tag group backscattering a first reply to the interrogator, the first reply including a first random number independently generated by the first tag, the first tag replying in accordance with a first sequence determined by the respective first random value independently picked by each tag of the selected tag group.

Claim 211 (new): The method of claim 210, wherein the first random number is 16 bits in length.

Claim 212 (new): The method of claim 210, further comprising the steps of:

    sending a second signal from the interrogator to the plurality of tags;  
    each tag of at least a portion of the selected tag group independently picking a respective second random value from a second group of integers in response to the second signal, the respective second random value being associated with a slot in accordance with the arbitration scheme, and the second group of integers being different from the first group of integers; and

    a second tag of the at least a portion of the selected tag group backscattering a second reply to the interrogator, the second reply including a second random number independently generated by the second tag, the second tag replying in accordance with a second sequence determined by the respective second random value independently picked by each tag of the at least a portion of the selected tag group.

Claim 213 (new): The method of claim 212, wherein a difference between the second group of integers and the first group of integers depends, at least in part, on collisions detected by the interrogator.

Claim 214 (new): The method of claim 213, wherein the first random number is 16 bits in length, and the second random number is 16 bits in length.

Claim 215 (new): The method of claim 210, further comprising the step of the interrogator receiving the first reply from the first tag, and, in response thereto, the interrogator sending an acknowledge signal to acknowledge the first tag.

Claim 216 (new): The method of claim 215, further comprising the step of the first tag backscattering at least a portion of an identification code that identifies an object to which the first tag is affixed.

Claim 217 (new): The method of claim 216, further comprising the step of the interrogator accessing the first tag individually after receiving both the first random number and the at least portion of the identification code from the first tag, the step of the interrogator accessing the first tag including the interrogator sending a command that includes a number randomly generated by the first tag that identifies the first tag.

Claim 218 (new): The method of claim 217, wherein the number randomly generated by the first tag that identifies the first tag is the first random number.

Claim 219 (new): The method of claim 210, further comprising the step of the first tag backscattering at least a portion of an identification code, the identification code identifying an object to which the first tag is affixed.

Claim 220 (new): The method of claim 210, wherein the portion of memory refers to respective bit storage locations contained in each of the plurality of tags.

Claim 221 (new): The method of claim 210, wherein comparing the bit string against the respective bits stored in the portion of memory of each respective tag of the plurality of tags comprises each and every tag of the plurality of tags determining itself to be a member of the selected tag group if the portion of memory has a length of 0 bits.

Claim 222 (new): A method comprising the steps of:

    sending a first signal from an interrogator to a plurality of radio frequency identification (RFID) tags to select a tag group, the first signal including a set of parameters that describe a portion of memory and a bit string;

    each of the plurality of tags receiving the first signal and comparing the bit string to a respective number contained in respective bit storage locations associated with the portion of memory within each of the plurality of tags to determine if a respective tag is a member of the tag group;

    sending a second signal from the interrogator;

    each tag of the tag group picking a respective first random value from a first group of integers in response to the second signal, the first group of integers corresponding to a first plurality of slots, and the respective first random value corresponding to a respective first slot of the first plurality of slots, a first

sequence in which tags of the tag group are to reply to the interrogator being determined by respective first slots associated with the tag group;

a first tag of the tag group backscattering a first reply to the interrogator, the first reply including a first random number generated by the first tag, the first tag replying in accordance with the first sequence;

the interrogator receiving the first reply from the first tag, and, in response thereto, the interrogator sending an acknowledge signal to acknowledge the first tag;

sending a third signal from the interrogator; and

a second tag of the tag group backscattering a second reply to the interrogator in response to the third signal, the second reply including a second random number generated by the second tag, the second tag replying in accordance with the first sequence.

Claim 223 (new): The method of claim 222, further comprising the interrogator sending a fourth signal after the step of each tag of the tag group picking a respective first random value, wherein the step of the first tag of the tag group backscattering the first reply to the interrogator is performed in response to the fourth signal.

Claim 224 (new): The method of claim 222, further comprising the steps of:

each tag of at least a portion of the tag group picking a respective second random value from a second group of integers in response to a signal indicating that a number of slots is to be adjusted, the second group of integers corresponding to a second plurality of slots, and the respective second random value corresponding to a respective second slot of the second plurality of slots, a second sequence in which tags are to reply to the interrogator being determined by respective second slots associated with the portion of the tag group; and

a third tag of the at least a portion of the tag group backscattering a third reply to the interrogator, the third reply including a third random number generated by the third tag, the third tag replying in accordance with the second sequence.

Claim 225 (new): The method of claim 224, further comprising the interrogator sending a fifth signal after the step of each tag of the at least a portion of the tag group picking a respective second random value, wherein the step of the third tag of the at least a portion of the tag group backscattering the third reply to the interrogator is performed in response to the fifth signal.

Claim 226 (new): The method of claim 224, wherein a difference between the second group of integers and the first group of integers depends, at least in part, on collisions detected by the interrogator.

Claim 227 (new): The method of claim 222, further comprising the step of the first tag backscattering at least a portion of an identification number that identifies an object to which the first tag is affixed.

Claim 228 (new): The method of claim 227, further comprising the step of the interrogator accessing the first tag individually after receiving both the first random number and the at least portion of the identification number from the first tag, the step of the interrogator accessing the first tag including the step of the interrogator sending a command including a number randomly generated by the first tag to identify the first tag.

Claim 229 (new): The method of claim 228, wherein the number randomly generated by the first tag to identify the first tag is the first random number.

Claim 230 (new): The method of claim 222, further comprising each and every one of the plurality of tags determining itself to be a member of the tag group if the portion of memory has a length of 0 bits.

Claim 231 (new): The method of claim 230, wherein the first and second random numbers are each 16 bits in length.

Claim 232 (new): A method comprising the steps of:

sending a query command from an interrogator to a plurality of wireless identification devices, the query command including a first set of fields comprising first bit values;

each device of the plurality of devices using the first bit values to determine if the respective device belongs to a group of chosen wireless identification devices that may respond to the query command;

each device of the group of chosen devices picking a respective first random value from a first group of integers in response to the query command, the first group of integers being determined using the first bit values, the respective first random value being associated with a respective slot in accordance with a slotted arbitration scheme;

a first device of the group of chosen devices backscattering a first random number during a first time slot in accordance with the slotted arbitration scheme, the first random number generated by the first device;

sending a subsequent command from the interrogator to the group of chosen devices, the subsequent command including a second set of fields comprising second bit values;

each device of at least a portion of the group of chosen devices picking a respective second random value from a second group of integers in response to



the subsequent command, the second group of integers being different from the first group of integers and determined using the second bit values, and the respective second random value being associated with a respective slot in accordance with the slotted arbitration scheme; and

a second device of the at least a portion of the group of chosen devices backscattering a second random number during a second time slot in accordance with the slotted arbitration scheme, the second random number generated by the second device.

Claim 233 (new): The method of claim 232, wherein the first and second random numbers are each 16 bits in length.

Claim 234 (new): The method of claim 232, further comprising the step of the interrogator receiving the first random number from the first device, and, in response thereto, the interrogator sending an acknowledge command to acknowledge the first device.

Claim 235 (new): The method of claim 234, further comprising the step of the first device backscattering at least a portion of a first identification code that identifies a first object to which the first device is affixed.

Claim 236 (new): The method of claim 235, further comprising the step of the interrogator receiving the second random number from the second device, and, in response thereto, the interrogator sending an acknowledge command to acknowledge the second device.

Claim 237 (new): The method of claim 236, further comprising the step of the second device backscattering at least a portion of a second identification code that identifies a second object to which the second device is affixed.

Claim 238 (new): The method of claim 237, further comprising the step of the interrogator transmitting the first random number back to the first device to individually access the first device.

Claim 239 (new): The method of claim 232, wherein the subsequent command is a query command.

Claim 240 (new): A method comprising the steps of:  
sending a first signal from an interrogator to first and second radio frequency identification (RFID) tags, the first signal including a bit string and indicating a portion of memory, the first tag having stored therein a first set of bits in bit storage locations corresponding to the portion of memory, and the second tag having stored therein a second set of bits in bit storage locations corresponding to the portion of memory;

the first tag receiving the first signal and comparing the bit string against the first set of bits to determine that the first tag is selected;

the second tag receiving the first signal and comparing the bit string against the second set of bits to determine that the second tag is selected;

sending a query command from the interrogator, the query command including a set of fields to select the first and second tags for response to the query command;

the first tag picking a first random value from a first group of integers in response to the query command, the first random value being associated with a first slot in accordance with an arbitration scheme;

the second tag picking a second random value from the first group of integers in response to the query command, the second random value being associated with a second slot in accordance with the arbitration scheme;

the first tag backscattering a first reply to the interrogator during a first period of time associated with the first slot, the first reply including a first random number generated by the first tag; and

the second tag backscattering a second reply to the interrogator during a second period of time associated with the second slot, the second reply including a second random number generated by the second tag.

Claim 241 (new): The method of claim 240, further comprising the step of the interrogator receiving the first reply from the first tag, and, in response thereto, the interrogator sending an acknowledge signal to acknowledge the first tag.

Claim 242 (new): The method of claim 241, further comprising the step of the first tag backscattering at least a portion of an identification code that identifies an object to which the first tag is affixed.

Claim 243 (new): The method of claim 242, further comprising the step of the interrogator accessing the first tag individually after receiving both the first random number and the at least portion of the identification code from the first tag, the step of the interrogator accessing the first tag including the interrogator sending a command that includes a number randomly generated by the first tag that identifies the first tag.

Claim 244 (new): The method of claim 243, wherein the number randomly generated by the first tag that identifies the first tag is the first random number, and the first random number is 16 bits in length.

Claim 245 (new): The method of claim 243, wherein comparing the bit string against the first set of bits to determine that the first tag is selected and comparing the bit string against the second set of bits to determine that the second tag is selected comprises determining that the first and second tags are selected if the portion of memory has a length of 0 bits.

Claim 246 (new): The method of claim 243, further comprising sending a second signal from the interrogator after the step of the first tag picking the first random value, the first tag backscattering the first reply in response to receiving the second signal.

Claim 247 (new): The method of claim 240, further comprising sending a second signal from the interrogator after the step of the first tag picking the first random value, the first tag backscattering the first reply in response to receiving the second signal.

Claim 248 (new): A method comprising the steps of:  
sending a first command from an interrogator to a radio frequency identification (RFID) tag, the first command including a bit string and indicating a portion of memory, the tag having stored therein an identifier, a portion of the identifier being stored in a location that corresponds to the portion of memory indicated by the first command;

the tag comparing the bit string against the portion of the identifier to determine if the tag is selected;

sending a second command from the interrogator;

the tag picking a first random value from a first range of values in response to the second command, the first range of values corresponding to slots in accordance with an arbitration scheme;

the tag backscattering a first self-generated random number during a slot of time that corresponds to the first random value in accordance with the arbitration scheme;

the interrogator detecting a collision upon receiving the first random number;

sending a third command from the interrogator;

the tag picking a second random value from a second range of values different from the first range of values in response to the third command, the second range of values corresponding to slots in accordance with the arbitration scheme; and

the tag backscattering a second self-generated random number during a slot of time that corresponds to the second random value in accordance with the arbitration scheme.

Claim 249 (new): The method of claim 248, further comprising the step of the interrogator receiving the second random number from the tag during the slot of time that corresponds to the second random value, and, in response thereto, the interrogator sending a fourth command to acknowledge the tag.

Claim 250 (new): The method of claim 249, further comprising the step of the tag backscattering at least a portion of an identification number that identifies an object to which the tag is affixed.

Claim 251 (new): The method of claim 250, wherein a difference between the first range of values and the second range of values depends on the third command.

Claim 252 (new): The method of claim 248, further comprising the step of the interrogator accessing the tag individually by sending a fourth command that includes the second random number.

Claim 253 (new): The method of claim 252, further comprising the step of the tag backscattering at least a portion of an identification number that identifies an object to which the tag is affixed.

Claim 254 (new): The method of claim 253, wherein a difference between the first range of values and the second range of values depends on the third command.

Claim 255 (new): The method of claim 248, further comprising the step of the interrogator receiving the second random number from the tag during the slot of time that corresponds to the second random value, and subsequently sending a fourth command to the tag, the fourth command including the second random number, the second random number being 16 bits in length.

Claim 256 (new): The method of claim 255, further comprising the step of the tag backscattering at least a portion of an identification number that identifies an object to which the tag is affixed.

Claim 257 (new): The method of claim 256, wherein a difference between the first range of values and the second range of values depends on the third command.

Claim 258 (new): The method of claim 248, further comprising the step of the tag backscattering at least a portion of an identification number that identifies an object to which the tag is affixed.



Claim 259 (new): The method of claim 258, wherein a difference between the first range of values and the second range of values depends on the third command.

Claim 260 (new): The method of claim 248, wherein a difference between the first range of values and the second range of values depends on the third command.

Claim 261 (new): The method of claim 260, wherein the difference between the first range of values and the second range of values depends on collisions detected by the interrogator.

Claim 262 (new): The method of claim 248, wherein the first random number, the second random number, and the identifier are the same number.

Claim 263 (new): A method comprising:  
sending a first command from an interrogator, the first command including a first set of parameters;  
a first radio frequency identification (RFID) device wirelessly receiving the first command and using the first set of parameters to determine if the first device is a participant that may respond to the first command and also to determine a first number of slots in which the first device may respond in

accordance with an arbitration scheme, the first device randomly picking a first slot from the first number of slots;

a second RFID device wirelessly receiving the first command and using the first set of parameters to determine if the second device is a participant that may respond to the first command and also to determine the first number of slots in which the second device may respond in accordance with the arbitration scheme, the second device randomly picking a second slot from the first number of slots;

the first device backscattering a first 16 bit random number during a period of time corresponding to the first slot randomly picked by the first device, the first random number generated by the first device;

sending a second command from the interrogator, the second command including a second set of parameters;

the second device wirelessly receiving the second command and using the second set of parameters to determine if the second device is a participant that may respond to the second command and also to determine a second number of slots in which the second device may respond in accordance with the arbitration scheme, the second number of slots being different from the first number of slots, the second device randomly picking a third slot from the second number of slots; and

the second device backscattering a second 16 bit random number during a period of time corresponding to the third slot randomly picked by the second device, the second random number generated by the second device.

Claim 264 (new): The method of claim 263, further comprising the interrogator receiving the first random number from the first device, and responding by sending a third command to acknowledge the first device.

Claim 265 (new): The method of claim 264, further comprising the first device backscattering at least a portion of an identification code that identifies an object to which the first device is affixed.

Claim 266 (new): The method of claim 265, further comprising the interrogator accessing the first device including transmitting the first random number back to the first device.

Claim 267 (new): The method of claim 266, wherein a difference between the first number of slots and the second number of slots is indicated by the second set of parameters of the second command.

Claim 268 (new): The method of claim 263, further comprising the second device backscattering a random number during a period of time corresponding to the second slot randomly picked by the second device, the first slot being equal to the second slot, and the interrogator detecting a collision before sending the second command.

Claim 269 (new): The method of claim 268, wherein a difference between the first number of slots and the second number of slots depends on collisions detected by the interrogator.

Claim 270 (new): The method of claim 269, wherein the difference between the first number of slots and the second number of slots is indicated by the second set of parameters of the second command.

Claim 271 (new): The method of claim 270, further comprising:  
the first device backscattering at least a portion of a first identification code that identifies a first object to which the first device is affixed; and  
the second device backscattering at least a portion of a second identification code that identifies a second object to which the second device is affixed.

Claim 272 (new): The method of claim 271, further comprising the interrogator accessing the first device including transmitting the first random number back to the first device.

Claim 273 (new): A method comprising:  
sending a first query command from an interrogator to a radio frequency identification (RFID) tag, the first query command including a first set of fields;  
the tag wirelessly receiving the first query command;

the tag determining, based on at least one field of the first set of fields, if the tag is chosen to participate in an arbitration scheme;

the tag picking a first random value from a first group of integers, the first group of integers being determined using at least one field of the first set of fields, the first random value corresponding to a first slot value in accordance with the arbitration scheme;

the tag backscattering a reply to the interrogator during a period of time associated with the first slot value in accordance with the arbitration scheme;

sending a second query command from the interrogator in response to the reply, the second query command including a second set of fields;

the tag wirelessly receiving the second query command;

the tag picking a second random value from a second group of integers, the second group of integers being determined using at least one field of the second set of fields, the second group of integers being different from the first group of integers, the second random value corresponding to a second slot value in accordance with the arbitration scheme;

the tag backscattering a random number to the interrogator during a period of time associated with the second slot value in accordance with the arbitration scheme; and

sending an acknowledge command from the interrogator to the tag if the random number is received by the interrogator without detecting a collision.

Claim 274 (new): The method of claim 273, further comprising the tag determining, based on at least one field of the second set of fields, if the tag is a participant that may respond to the second query command.

Claim 275 (new): The method of claim 274, further comprising the tag backscattering at least a portion of an identification code that identifies an object to which the tag is affixed.

Claim 276 (new): The method of claim 275, further comprising the interrogator detecting a collision upon receiving the reply.

Claim 277 (new): The method of claim 276, wherein a difference between the first group of integers and the second group of integers depends on collisions detected by the interrogator.

Claim 278 (new): The method of claim 273, wherein a difference between the first group of integers and the second group of integers is indicated by the second set of fields of the second query command.

Claim 279 (new): The method of claim 278, further comprising the interrogator transmitting the random number back to the tag to individually access the tag.

Claim 280 (new): The method of claim 279, further comprising the tag backscattering at least a portion of an identification code that identifies an object to which the tag is affixed.

Claim 281 (new): A method comprising:

selecting a group of radio frequency identification (RFID) tags based on respective bits stored in an identified portion of memory of each respective tag of the group of tags;

causing each respective tag of a first portion of the group of tags to backscatter a respective, independently generated random number during a respective first time slot randomly picked from a first range of time slots by each respective tag of the first portion in accordance with an arbitration scheme;

causing each respective tag of a second portion of the group of tags to backscatter a respective, independently generated random number during a respective second time slot randomly picked from a second range of time slots by each respective tag of the second portion in accordance with the arbitration scheme, wherein the first range of time slots differs from the second range of time slots;

acknowledging each respective tag of the group of tags; and

causing each respective tag of the group of tags to backscatter at least a portion of a respective identification code that identifies a respective object to which each respective tag is affixed.

Claim 282 (new): The method of claim 281, wherein a plurality of RFID tags are members of both the first and second portions of the group of tags.

Claim 283 (new): The method of claim 282, wherein selecting the group of RFID tags selects all RFID tags in a field of an interrogator if the identified portion of memory has a length of 0 bits.

Claim 284 (new): The method of claim 283, wherein each respective, independently generated random number is 16 bits in length.

Claim 285 (new): The method of claim 284, further comprising accessing an individual tag of the group of tags including sending back to the individual tag the respective random number independently generated by the respective individual tag.

Claim 286 (new): The method of claim 281, wherein the respective identifier is the respective random number.